

a step of forming a film comprising a photosensitive material and an electroconductive material on said rear plate;

a step of irradiating desired areas of said film with light;

a step of patterning said film; and

a step of baking said patterned film.--

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cont.

REMARKS

In view of the above amendments and following remarks, Applicant respectfully requests reconsideration and allowance of the above-identified application.

Claims 1-16 are now pending in this application, with Claims 1, 6-8, 10, and 14-16 being independent. By this Amendment, Applicant has amended Claims 1 and 6-8, and added new Claims 15 and 16. Claims 10-12 are allowed.

Initially, Applicant would like to thank the Examiner for indicating that Claims 3 and 6-8 would be allowable if rewritten in independent form. Applicant has rewritten Claims 6-8 in independent form and respectfully requests allowance of those claims.

Claims 1, 2, 4, 5, 9, 13, and 14 stand rejected under 35 U.S.C. § 103 over U.S. Patent No. 6,060,113 (Banno et al.) in view of U.S. Patent No. 6,312,864 (Tokai et al.). Applicant traverses this rejection.

Initially, Applicant notes that Independent Claim 14 recites "selectively forming a film comprising a photosensitive material and an electroconductive material on

the rear plate through apertures of a mask”. Applicant notes that this feature is recited in allowed Claim 10, and is not described or suggested by the Banno et al. and Tokai et al. patents. Accordingly, Applicant submits that Claim 14 should also be allowed.

As recited in independent Claim 1, Applicant’s invention is directed to a method of producing an image-forming apparatus. The method includes a step of arranging a plurality of first electrodes and second electrodes on a rear plate. There are also steps of forming a plurality of column-directional wires, wherein each of the column-directional wires connects commonly a plurality of the first electrodes, and forming a plurality of row-directional wires, wherein each of the row-directional wires connects commonly a plurality of the second electrodes. In the step of forming the column-directional wires, a film comprising a photosensitive material and an electroconductive material is formed on the rear plate. Intervals of the row-directional wires are larger than those of the column-directional wires. Also included is a step of forming an insulating layer between a row-directional wire and a column-directional wire at each of intersections between the row-directional wires and column-directional wires. At each of the intersections, each of the column-directional wires is disposed between each of the row-directional wires and the rear plate.

The Banno et al. patent is directed to an electron-emitting device having a matrix of wirings. Applicant submits that the Banno et al. patent does not describe that a pitch of column-directional wires is smaller than a pitch of row-directional wires. In addition, that patent does not describe forming a film comprising a photosensitive material

and an electroconductive material selectively on a rear plate, particularly at an intersection of the wires.

The Tokai et al. patent is directed to a method for producing patterns in organic film. Applicant submits, however, that the Tokai et al. patent does not even describe a matrix in which wirings intersect each other through an insulating layer.

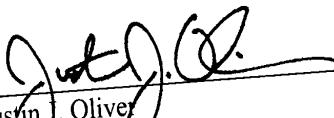
Accordingly, Applicant submits that the Banno et al. and Tokai et al. patents, taken alone or in combination, fail to disclose or suggest at least the features of (i) forming an insulating layer between a row-directional wire and a column-directional wire at each of intersections between the row-directional wires and column-directional wires, (ii) wherein, at each of the intersections, each of the column-directional wires is disposed between each of the row-directional wires and a rear plate, and (iii) wherein a step of forming the column-directional wires includes forming a film comprising a photosensitive material and an electroconductive material on the rear plate, as recited in independent Claim 1.

New independent Claims 15 and 16 each recite steps of forming a plurality of column-directional wires and forming an insulating layer between a row-directional wiring and a column-directional wiring at each of intersections between the row-directional wirings and column-directional wirings, wherein the step of forming the column-directional wirings includes forming a film comprising a photosensitive material and an electroconductive material on the rear plate. Accordingly, Applicant submits that these claims are allowable for reasons similar to those discussed above with respect to independent Claim 1.

The remaining claims in this application are dependent claims which depend from the independent claims discussed above, and are thus patentable over the documents of record for reasons noted above with respect to those independent claims. In addition, each recites features of the invention still further distinguishing it from the applied patents. Applicant requests favorable and independent consideration thereof.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,


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VERSION SHOWING CHANGES MADE TO THE CLAIMS

1. (Amended) A method of producing an image-forming apparatus wherein a face plate having phosphors of the three primary colors is opposed to a rear plate comprising a plurality of electron-emitting devices, each having a first electrode and a second electrode, and a plurality of column-directional wires and row-directional wires are connected to the plurality of electron-emitting devices, said method comprising:

(a) a step of arranging a plurality of first electrodes and second electrodes on the rear plate;

(b) a step of forming a plurality of column-directional wires, wherein each of said column-directional wires connects commonly a plurality of said first electrodes;

(c) a step of forming a plurality of row-directional wires, wherein each of said row-directional wires connects commonly a plurality of said second electrodes,

[said] the row direction is substantially perpendicular to the column direction, and

intervals of said row-directional wires are larger than those of said column-directional wires;

(d) a step of forming an insulating layer between [said] a row-directional wire and a column-directional wire at each of intersections between said row-directional wires and column-directional wires; and

(e) a step of applying a liquid containing at least a metal or a semiconductor so as to connect said first and second electrodes to each other according to an ink jet method,

wherein, at each of said intersections, each of said column-directional wires is disposed between each of said row-directional wires and said rear plate, and

wherein said step of forming the column-directional wires comprises:

a step of forming a film comprising a photosensitive material and an electroconductive material on said rear plate;

a step of irradiating desired areas of said film with light;

a step of patterning said film; and

a step of baking said patterned film.

6. (Twice Amended) [The production method of the image-forming apparatus according to any one of Claims 1 to 3, wherein a cross-sectional area of said row-directional wires is larger than a cross-sectional area of said column-directional wires]

A method of producing an image-forming apparatus which comprises a face plate having

phosphors, a rear plate having a plurality of electron-emitting devices and a plurality of wirings connected to the plurality of electron-emitting devices, said method comprising:

(a) a step of arranging a plurality of first electrodes and second electrodes on a rear plate;

(b) a step of forming a plurality of column-directional wirings,
wherein each of said row-directional wirings connects some of the first electrodes,

(c) a step of forming a plurality of row-directional wirings,
wherein each of said row-directional wirings connects some of the second electrodes,

the row direction is substantially perpendicular to the column direction; and

(d) a step of forming an insulating layer between a row-directional wiring and a column-directional wiring at each of intersections between said row-directional wirings and column-directional wirings,

wherein a cross-sectional area of said row-directional wirings is larger than a cross sectional area of said column-directional wirings, and

wherein said step of forming the column-directional wirings comprises:
a step of forming a film comprising a photosensitive material and an electroconductive material on said rear plate;

a step of irradiating desired areas of said film with light;

a step of patterning said film; and
a step of baking said patterned film.

7. (Amended) [The production method of the image-forming apparatus according to Claim 6, wherein a width of said row-directional wires is wider than a width of said column-directional wires] A method of producing an image-forming apparatus which comprises a face plate having phosphors, a rear plate having a plurality of electron-emitting devices and a plurality of wirings connected to the plurality of electron-emitting devices, said method comprising:

(a) a step of arranging a plurality of first electrodes and second electrodes on a rear plate;

(b) a step of forming a plurality of column-directional wirings,
wherein each of said column-directional wirings connects some of the first electrodes;

(c) a step of forming a plurality of row-directional wirings,
wherein each of said row-directional wirings connects some of the second electrodes,

the row direction is substantially perpendicular to the column direction; and

(d) a step of forming an insulating layer between a row-directional wiring and a column-directional wiring at each of intersections between said row-directional wirings and column-directional wirings.

wherein a width of said row-directional wirings is wider than a width of said column-directional wirings, and

wherein said step of forming the column-directional wirings comprises:
a step of forming a film comprising a photosensitive material and an electroconductive material on said rear plate;

a step of irradiating desired areas of said film with light;

a step of patterning said film; and

a step of baking said patterned film.

8. (Twice Amended) [The production method of the image-forming apparatus according to Claim 6, wherein a thickness of said row-directional wires is thicker than a thickness of said column-directional wires] A method of producing an image-forming apparatus which comprises a face plate having phosphors, a rear plate having a plurality of electron-emitting devices and a plurality of wirings connected to the plurality of electron-emitting devices, said method comprising:

(a) a step of arranging a plurality of first electrodes and second electrodes on a rear plate;

(b) a step of forming a plurality of column-directional wirings,

wherein each of said column-directional wirings connects some of the first

electrodes;

(c) a step of forming a plurality of row-directional wirings,

wherein each of said row-directional wirings connects some of the second

electrodes,

the row direction is substantially perpendicular to the column direction; and

(d) a step of forming an insulating layer between a row-directional wiring
and a column-directional wiring at each of intersections between said row-directional
wirings and column-directional wirings,

wherein a thickness of said row-directional wirings is thicker than a
thickness of said column-directional wirings, and

wherein said step of forming the column-directional wirings comprises:

a step of forming a film comprising a photosensitive material and an
electroconductive material on said rear plate;

a step of irradiating desired areas of said film with light;

a step of patterning said film; and

a step of baking said patterned film.